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WEST SIBERIAN METALLURGICAL PLANT

NOVOKUZNETSK, USSR

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25X1

25X1

IB - 195/64
28 April 1964
Copy # 1

MEMORANDUM TO: Chief, Resources Division, ORR

25X1 ATTENTION :

THROUGH : Chief, Requirements Branch, Reconnaissance Group, CGS

FROM : Chief, CIA/PID (NPIC)

SUBJECT : West Siberian Steel Combine, Novokuznetsk, USSR

REFERENCES : (1) ORR Requirement No. C-RR4-81,078
(2) CIA/PID Project No. C 354-64

1. This memorandum is in response to the referenced requirement which asks for a comparative study of construction, the location and description of facilities at the West Siberian Steel Combine, Novokuznetsk, USSR, and finally the preparation of a Photographic Intelligence Report.

2. The following KEYHOLE Missions were analyzed to complete this requirement:

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The enclosed annotated map (CIA/PID/IB-P-628/64) shows the location of the West Siberian Steel Plant and associated facilities. Refer to Table I which provides a summary of construction activity. Building sizes are provided on the legend for CIA/PID/IB-P-631/64.

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GROUP 1
Excluded from automatic downgrading and declassification

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3. On the plant area was observed on good quality photography (see enclosure CIA/PID/IB-P-629/64). At this time it would have been impossible to identify the specific industry under construction. However, knowing from later coverage what the installation would be, it was possible to describe the stage of construction as of

Almost all of the facilities were in early stages of construction. Some roads were complete and fill was in for some rail lines, but most of the work was finished at a later date. At the heat and power plant, the boilerhouse (5) and generator hall (6) were started, the tall stack completed, and the water intake channel (1) was nearing completion.

It appeared that the first coke oven battery (18) was nearing completion; however, the by-products section (20) and coal handling facilities (17) were still under construction. Some small buildings appear at the site of the blast furnace (23) but construction of the furnace and related facilities has not begun. Two parallel warehouses (35) were the largest buildings to date. Numerous other small buildings have been constructed; however, the excavations, for the major buildings, had not been started. The water treatment section (37) was in an early stage of construction, as was the large storage area at annotation 8.

4. On Mission the plant was seen on fair quality, snow covered photography (see enclosure CIA/PID/IB-P-630/64).

All components of the heat and power plant were complete (1 thru 6) and the plant probably was in operation. The first coke oven battery (18), coal handling facilities (17), and by-products section (20) were complete. A large plume of white smoke or steam at the coke oven indicates that this section was in operation. Construction of a tall structure has been started in the area of the first blast furnace (23). The large excavation (27) east of the blast furnace has been started; however, no buildings have been begun. In the east corner of the plant area one large building (32) appears complete with a second one (33) still under construction. These two buildings are probably finishing mills.

Two additional warehouses (35) as well as several unidentified buildings have been constructed along the northern side of the plant. Although a few small buildings were observed along the northwest side of the plant on Mission construction activity, as seen on Mission is fairly advanced. This construction is on the probable workshops (36) and the possible oxygen plant (16). Construction continues on the water treatment section (37). The southwest storage area (8) is now fenced and at least one long narrow warehouse (7) was under construction. Large quantities of unidentified objects are stored in orderly rail served rows in the open. Equipment and special building materials may be stored here which will ultimately be used in the plant.

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The road and rail network has been expanded and considerable ditching has been completed. Fill is complete for a southwest-northeast oriented railyard (14). Near the middle of the fill, for this railyard, a large excavation (15) is present. The exact function of this excavation has not been determined; however, it may be the beginning of a system for dumping and handling of incoming iron ore.

25X1 5. On Mission which provides excellent quality coverage, it can be seen that construction has been advanced; however, much still remains to be completed before the plant will be operational (see enclosure CIA/PID/IB-P-631/64). At this time the identity of the plant becomes obvious. Construction of an open hearth furnace building should be evident at this stage if they were to have one; however, there is no indication that one will be built. Thus it appears that steel will be made by the oxygen converter process

The oxygen converter building (28) is a tall multisectional structure (145 feet tall) with a tall associated stack (335 feet tall). Such height is required to provide vertical room for hoisting the oxygen lances. This building is ideally located in relationship to the existing blast furnace, the area for future blast furnaces, as well as the rolling mills. It appears that this building will be extended to house more converters as the pig iron capacity of the plant increases. The deep excavation (27) which is in line with the probable oxygen converter shop may possibly be the site of a continuous casting operation. This excavation, approximately 80 feet deep at the deepest point has been enlarged and deepened and footings have been poured at the southern end (see enclosure CIA/PID/IB-P-634/64 for details of this site). Molten steel from the converter shop would be carried to continuous casting equipment which would be installed in this excavation. Pouring would be conducted at near ground level, eliminating the need for lifting the molten steel. The steel would be cast into the desired cross section and the finished billets, blooms or slabs would descend into the pit, be cut into lengths, and hoisted back to the ground floor for transfer to the rolling mills. Due to the early stage of construction at annotation 28 it is not possible to make a positive identification; however, the idea of continuous casting bears watching on future coverage.

25X1 As of the thermal power plant was in operation. Although the by-products coke plant is complete it could not be ascertained if it was in operation. A second coke oven battery (19) is under construction and the conveyor system (22) between the coke plant and the blast furnace (23) has not been installed. It appears that one blast furnace, and its associated hot stoves and casting house (24) are complete, although the gas cleaning equipment and blower house are still to be complete. No ore storage or stock trestle were observed.

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The probable finishing mill under construction (33) on Mission [redacted] appears to be nearing completion. Also at the northern end of the area, between the aforementioned building and the probable warehouses, a large offset excavation (30) has been begun for a multisectional building which will be a rolling mill.

The water treatment section (37) is either complete or is nearing completion. The probable workshops (36) and the possible oxygen plant (16) appears to be nearing completion. The possible oxygen plant consists of a tall building (16a) which possibly houses compressers and fractionation towers, an area containing equipment (16d) and two unidentified buildings (16a and c). The road and rail nets within the plant are also nearing completion. Numerous ditches are present throughout the area. The storage area in the southwest (8) end of the plant appears to be complete; three long, narrow warehouses (7) are completed and considerably more material is stored in the open than was observed in [redacted] 25X1 25X1 [redacted]

6. The quality of coverage from 1004-1 and 1004-2 is relatively poor, being somewhat oblique and hazy (see CIA/PID/IB-P-632/64). Nevertheless, it can be determined that construction has continued. Since the last coverage in [redacted] 25X1 [redacted] 25X1 building 33 and 31 have been completed and a building similar to 33 is going up at 34. A conveyor system has been completed since [redacted] 25X1 connecting the flux unloading building (29) with the oxygen converter building (28). A second bay or section has been added to the oxygen converter building. Near the south end of the deep excavation (27) a building (39) has been added. Two new excavation have been started; the one 40 is unidentified while the excavation at 12 appears to be associated with items 13 and 14. This may be the beginning of an ore handling system; however construction has not progressed sufficiently for positive identification. The blower house (25) for the first blast furnace appears to be complete; however, it is still not possible to determine whether the blast furnace is operational, but it is highly doubtful.

There is earth scaring at annotation 38 which is in line with the first blast furnace and may possibly be the beginning of the foundation for a second blast furnace. Additional construction continues at the possible oxygen plant (annotation 16).

In [redacted] 25X1 the by-products coke plant and heat and power plant, as well as the water treatment plant (annotation 37) are in operation. Tracks in the snow cover indicate considerable activity throughout the entire plant area.

The roof cover of the main buildings completed by [redacted] is 25X1 915,275 square feet. Additional 484,650 square feet is under construction at this time. This figure does not include any roof cover for a structure at the possible continuous casting site.

A rail-served limestone quarry is located just to the east of the plant (see enclosure CIA/PID/IB-P-628/64).

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7. Several general conclusions can be made after the analysis of the West Siberian Steel Plant:

a. Only two major sections, the thermal power plant and the by-products coke plant, can be considered to be operational as of [ ] 25X1 25X1

b. None of the construction activity indicates that open hearth furnaces are to be installed, thus it appears that steel will be produced by the oxygen converter method. An oxygen converter shop has been identified at annotation 28.

c. From the layout of the plant adequate space has been provided for expansion. Additional coke ovens can be added in line with the present ones in the area annotated 21, and furthermore, the by-products section is located off center from the existing coke batteries in anticipation of such expansion. Likewise, additional blast furnaces can be constructed along a southwest-northeast axis, in the areas annotated 26 in line with the present blast furnace. See CIA/PID/IB-P-633/64 for over all dimension of various section of the plant.

8. It has been reported that a sinter plant is also planned in this area. Within the plant proper, there are no indications of a sinter plant nor are there facilities as yet, for ore storage or handling. However, approximately 7000 feet southeast is located a large processing industry which is closely associated with the subject iron and steel plant (see enclosures CIA/PID/IB-P-628,629, and 633/64). Although this plant is considerably larger than the usual sinter plant, there are certain factors which indicate that it may possibly be a sinter plant: first, it is tied to the iron and steel plant by excellent rail connections; second, if it were supplying a raw material to the iron and steel plant the only remaining bulky material needed, in large quantities, would be iron ore; third, the many conveyors within the plant indicates that large quantities of bulk raw material are handled, and furthermore the plant is connected by rail to a bulk storage area near the Tom River. This bulk storage area, in turn, is connected to an improved site, on the river where some port or handling facilities may be in the process of being installed. The possible Sinter Plant appears to be too large to serve only the subject iron and steel plant, therefore, it may be assumed that it is a centrally located plant, which processes iron ore for the iron and steel complex within the city of Novokuznetsk, as well as for the West Siberian Steel Plant. This 25X1 possible plant was completed prior to Mission [ ] although the improvements to the river area were not observed until Mission [ ] 25X1 25X1 25X1

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9. Vertical measurements were provided by TID/TAB (NPIC), and should be approximately ± 10 feet within the limits of the system. Horizontal measurements were provided by the PID/IB photo analyst assigned to the project and have a ± error of 10 feet based on five measurements of the same item.

10. The photo analyst assigned to this project was [redacted] 25X1 who may be contacted on extension [redacted] should you have further questions concerning this project. This memorandum is in partial answer to the requirement. A Photographic Intelligence Report is to follow. 25X1

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[redacted]

Enclosures:
1 Annotated Map
(CIA/PID/IB-P-628/64)
5 Annotated Photo Enlargements
(CIA/PID/IB-P-629/64 thru P-633/64)
1 Line Drawing
(CIA/PID/IB-P-634/64)

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MAJOR ITEM				
Thermal Power Plant	U/C	Complete		
1st Coke Oven	Nearing completion	Complete		
2nd Coke Oven	Not begun	Not begun	U/C	U/C
Coal Handling Equipment	U/C	Complete		
By-Products Section	U/C	Complete		
Blast Furnace	Not begun	Early stage construction	Nearing completion	Nearing completion
Converter Shop	Not begun	Not begun	Stack completed converter bldg. mid-stage con.	Nearing completion
Possible Continuous Casting	Not begun	Excavation started	Excavation enlarged	Construction continues
Possible Oxygen Plant	Not begun	U/C	Nearing Completion	Probably complete
Rolling Mill	Not begun	Not begun	Excavation started	Excavation somewhat enlarged
Finishing Mills	Not begun	U/C	Construction continues	Construction continues
Water Treatment Section	Early stage construction	U/C	Complete or nearing completion	Complete
Possible Sinter Plant	Completed			

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WEST SIBERIAN STEEL COMBINE

CIA/PID/IB-P-629/64

LEGEND

1. Water Intake Channel
2. Pumphouse
3. Underground Pipeline
4. Coal
5. Boilerhouse
6. Generator Hall
7. Warehouse
8. Storage Area
14. Fill for Railyard
15. Excavation
16. Possible Oxygen Plant
17. Coal Handling Facilities
18. Coke Oven
20. By-Products Section
23. Blast Furnace and Hot Stoves
27. Excavation
32. Prob. Finishing Mills
33. Probable Finishing Mills
35. Warehouses
36. Probable Workshop
37. Water Treatment Section

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WEST SIBERIAN STEEL COMBINE

CIA/PID/IB-P-630/64

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L-E-G-E-N-D

	ITEM	DIMENSIONS	SQ. FT. ROOF COVER
1.	Water Intake Channel		
2.	Pumphouse		
3.	Underground Pipeline		
4.	Coal		
5.	Boilerhouse	280 x 165	46,200
6.	Generator Hall	540 x 115	62,100
7.	Warehouses (three each)	935 x 55	154,275
8.	Open Storage		
9.	Overhead Steam Line		
10.	Excavation		
11.	Building Foundation		
12.	Excavation		
13.	Ditch or Underground Conveyor		
14.	Railyard		
15.	Excavation		
16.	Possible Oxygen Plant		
	a. Possible Compressor and Tower Building	250 x 100	25,000
	b. Unidentified Building	225 x 160	36,000
	c. Unidentified Building	Multisectional	34,500
	d. Area (200' x 100') containing equipment		
17.	Coal Handling Facilities		
18.	Coke Oven (500' x 65')		
19.	Coke Oven Underconstruction (Temporary building over Coke Oven 260' x 85')		
20.	By-Products Section		
21.	Area for future Coke Ovens		
22.	Ditch for buried Coke Conveyor		
23.	Hot Stoves and Blast Furnace		
24.	Casting Building		
25.	Blower House	450 x 65	29,250
26.	Area for future Blast Furnaces		
27.	Excavation (Possible continuous casting building)		
28.	Oxygen Converter Building	230 x 130 210 x 120	55,100
29.	Flux Warehouse	400 x 50	20,000
30.	Excavation for Rolling Mill	(Multisectional; overall length 1630 Ft.)	374,450
31.	Unidentified Building	290 x 80	23,200
32.	Probable Finishing Mill	450 x 135	60,750
33.	Probable Finishing Mill	690 x 190	131,100
34.	Probable Finishing Mill U/C	580 x 190	110,200
35.	Warehouses	590 x 90 330 x 85 480 x 85 480 x 100	169,950
36.	Probable Workshops	360 x 110 260 x 75 175 x 50	67,850
37.	Water Treatment Section		

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WEST SIBERIAN STEEL COMBINE

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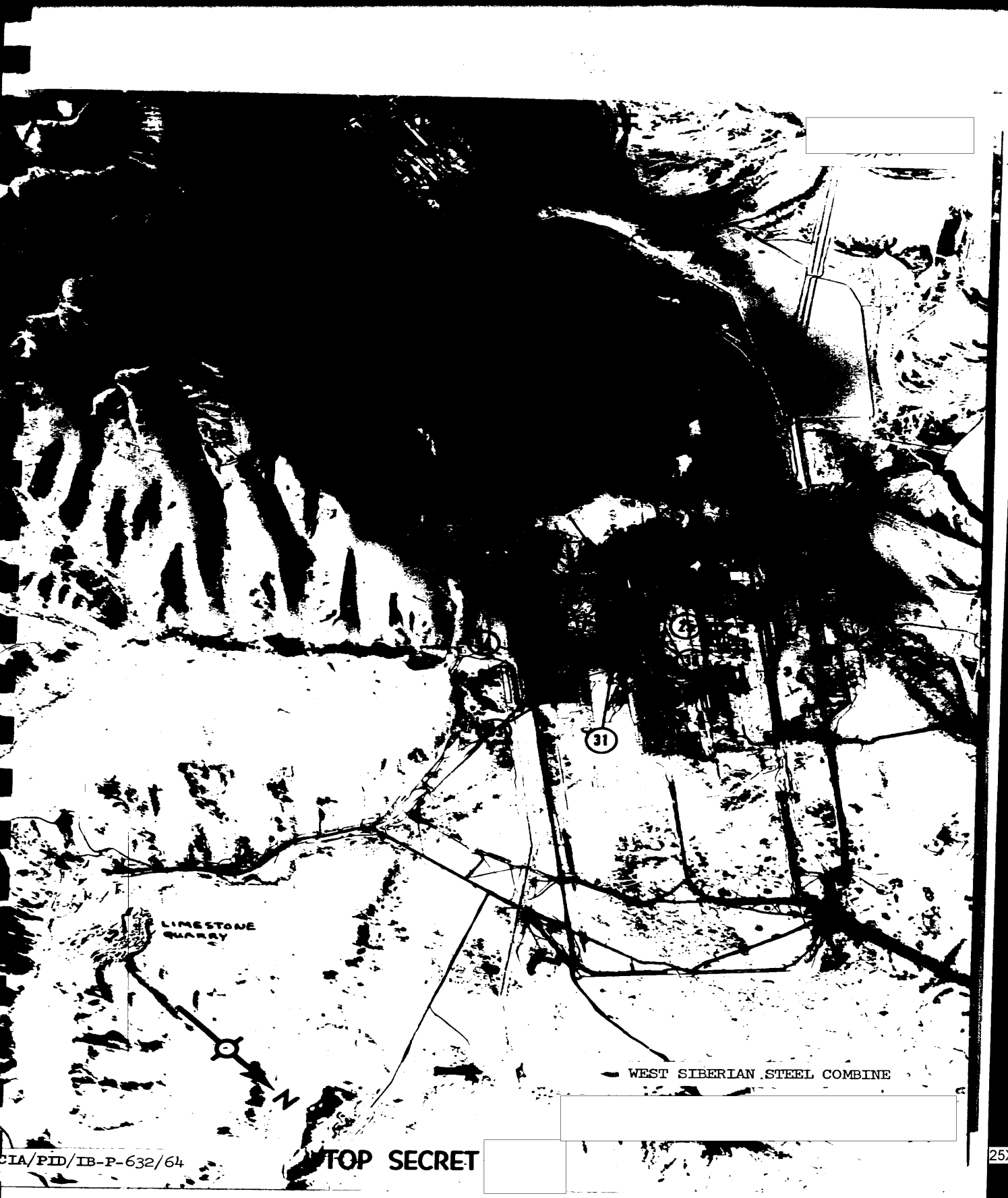
LEGEND

12. Excavation
13. Ditch or Underground Conveyor
14. Railyard
16. Possible Oxygen Plant
25. Blowerhouse
27. Excavation (Possible Continuous Casting Building)
28. Oxygen Converter Building
29. Flux Warehouse
31. Unidentified Building
33. Probable Finishing Mill
34. Probable Finishing Mill
38. Excavation for Possible Blast Furnace
39. Unidentified Building
40. Excavation



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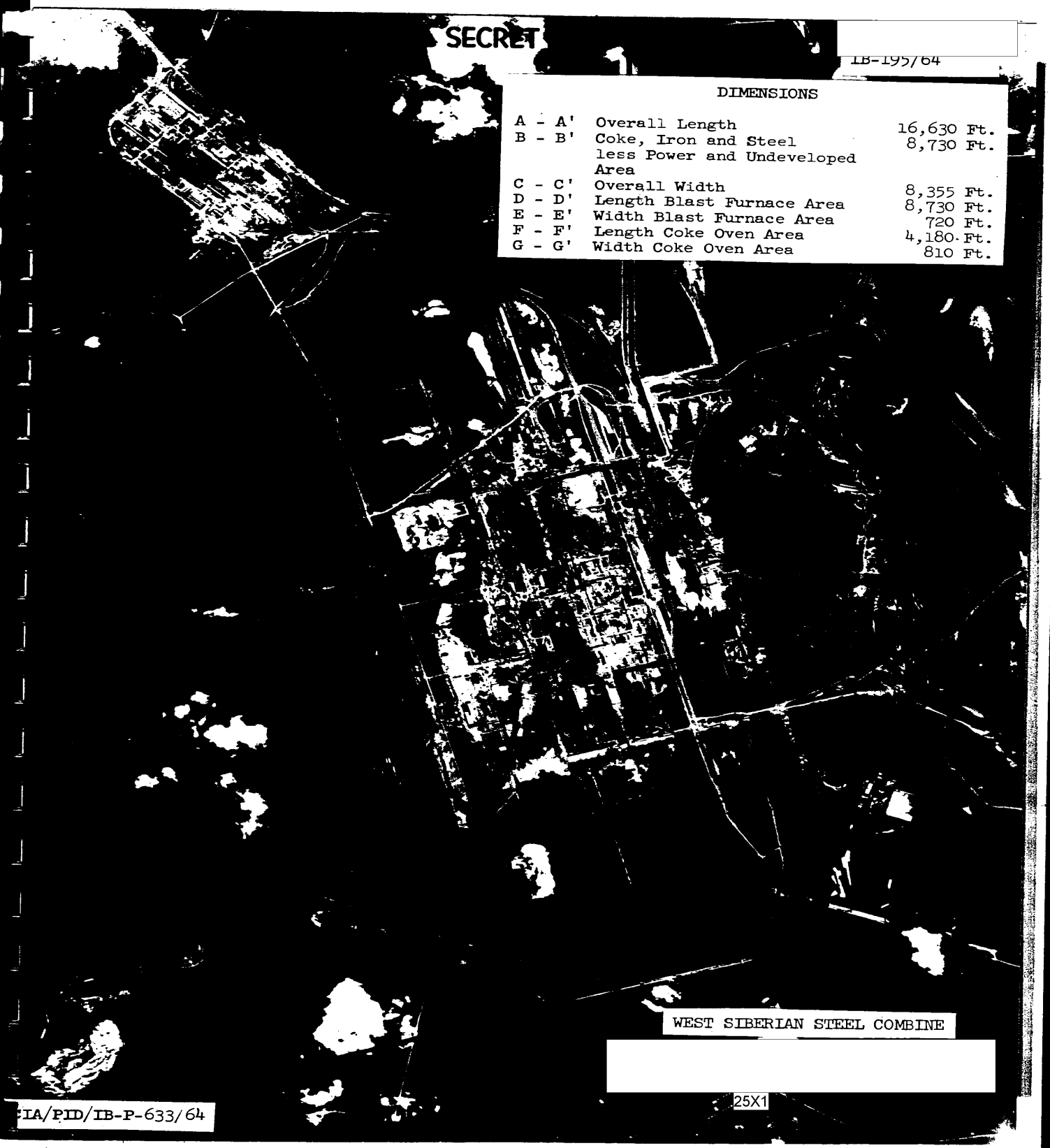

DIMENSIONS

A - A'	Overall Length	16,630 Ft.
B - B'	Coke, Iron and Steel less Power and Undeveloped Area	8,730 Ft.
C - C'	Overall Width	8,355 Ft.
D - D'	Length Blast Furnace Area	8,730 Ft.
E - E'	Width Blast Furnace Area	720 Ft.
F - F'	Length Coke Oven Area	4,180 Ft.
G - G'	Width Coke Oven Area	810 Ft.

WEST SIBERIAN STEEL COMBINE

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CIA/PID/IB-P-633/64

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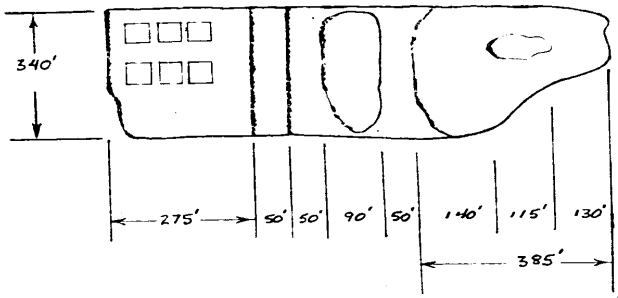
CROSS SECTION AND PLAN VIEW

OF EXCAVATION FOR

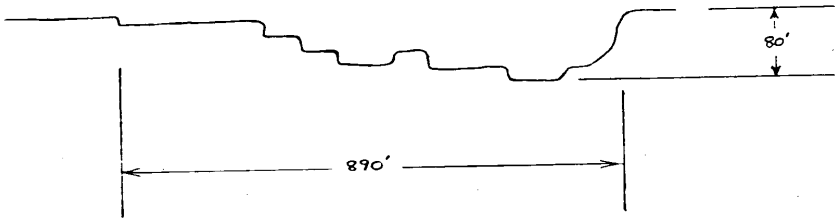
POSSIBLE CONTINUOUS CASTING BUILDING

ANNOTATION NO. 27

PLAN VIEW



CROSS SECTION



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CIA/PID/IB-P-634/64

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